

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-28. (Canceled)

29. (Previously Presented) A process for the preparation of a polyether-urethane comprising at least one allyl group which comprises, in incorporated form,

a) at least one polyether which comprises a group reactive toward isocyanate groups, and an allyl group,

b) optionally at least one compound which comprises at least two groups reactive toward isocyanate groups, and

c) at least one polyisocyanate,

and in which

i) in a first stage the compounds a), optionally at least one of the compounds b) and at least one of the polyisocyanates c) are reacted without the addition of a solvent, at a temperature of at least 60°C and at a ratio of isocyanate group equivalents to equivalents of groups reactive toward isocyanate groups in a range from 1.5:1 to 2.2:1, to give an isocyanate group-comprising prepolymer, and

ii) in a second stage the prepolymer obtained in step i) is reacted with the compounds b) and c) not already used in step i) to give the polyether-urethane.

30. (Previously Presented) A process as claimed in claim 29, in which, in stage i), a prepolymer with a glass transition temperature T_G of at most 100°C is obtained.

31. (Previously Presented) A process as claimed in claim 30, in which the reaction in step i) takes place at a temperature which is higher than the glass transition temperature of the prepolymer.

32. (Previously Presented) A process as claimed in claim 29, in which the compounds b) used in step ii) have hydroxyl groups as groups reactive toward isocyanate groups, and the reaction takes place without the addition of a solvent.

33. (Previously Presented) A process as claimed in claim 29, in which the compounds b) used in step ii) have primary or secondary amino groups as groups reactive toward isocyanate groups, and the reaction takes place in the presence of a protic-polar solvent.

34. (Currently Amended) A hair treatment composition comprising water-soluble or water-dispersible polymer which comprises at least one free-radically polymerizable compound which has at least one α,β -ethylenically unsaturated double bond and at least a polyether-urethane in copolymerized form, where the polyether-urethane comprises at least one allyl group, and, in incorporated form,

a) ~~at least one polyether which comprises a group reactive toward isocyanate groups, and an allyl group, polyalkylene glycol monoallyl ether having a number-average molecular weight in the range from 300 to 5000,~~

b) optionally at least one compound which comprises at least two groups reactive toward isocyanate groups, and

c) at least one polyisocyanate,
as setting agent and/or as conditioner.

35. (Previously Presented) The hair treatment composition as claimed in claim 34, where the composition is in the form of a hair gel, hair mousse, shampoo, setting foam, hair tonic, hair spray or hair foam.

36. (Canceled)

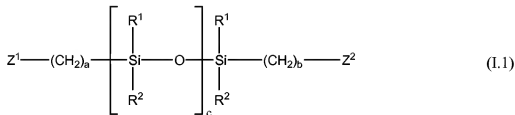
37. (Currently Amended) A polyether-urethane comprising at least one allyl group, which comprises, in incorporated form,

a) ~~at least one polyether which comprises a group reactive toward isocyanate groups, and an allyl group, polyalkylene glycol monoallyl ether having a number-average molecular weight in the range from 300 to 5000,~~

b) at least one compound which comprises at least two groups reactive toward isocyanate groups, chosen from compounds b3) with a number-average molecular weight of more than 280 which contain at least two active hydrogen atoms and at least one siloxane group per molecule, and

c) at least one polyisocyanate.

38. (Previously Presented) A polyether-urethane as claimed in claim 37, which comprises, in incorporated form, at least one compound b3) chosen from:
 -polysiloxanes of the formula I.1



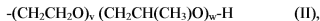
in which

a and b, independently of one another, are 1 to 8,

c is 2 to 100,

R¹ and R², independently of one another, are C₁-C₈-alkyl, benzyl or phenyl,

Z¹ and Z², independently of one another, are OH, NHR³ or a radical of the formula II

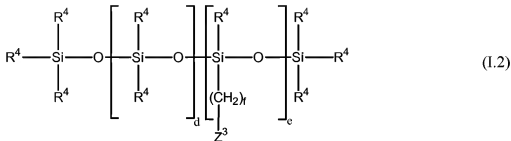


where

in the formula II the alkylene oxide units can be in any order, and
 v and w, independently of one another, are an integer from 0 to 200, where the
 sum of v and w is >0,

R^3 is hydrogen, C_1 - C_8 -alkyl or C_5 - C_8 -cycloalkyl;

-polysiloxanes of the formula I.2



in which

the siloxane units can be in any order,

the radicals R^4 are each, independently of one another, C_1 - C_8 -alkyl,

d is an integer from 5 to 1000,

e is an integer from 2 to 100,

f is an integer from 2 to 8,

Z^3 is OH, NHR^3 , where R^3 is as defined above, or a radical of the formula III

$-(OCH_2CH_2)_x (OCH(CH_3)CH_2)_y -OH$ (III),

where

in the formula III the alkylene oxide units can be in any order,

x and y, independently of one another, are an integer from 0 to 200, where the
 sum of x and y is >0,

and mixtures thereof.

39. (Previously Presented) A water-soluble or water-dispersible polymer which
 comprises, in copolymerized form, at least one polyether-urethane as defined in claim 37, and at
 least one free-radically polymerizable compound which has at least one α,β -ethylenically
 unsaturated double bond.

40. (Previously Presented) A polymer as claimed in claim 39, which comprises, in copolymerized form, at least one free-radically polymerizable hydrophilic nonionic compound M1).

41. (Previously Presented) A polymer as claimed in claim 40, where the compound M1) is chosen from primary amides of α,β -ethylenically unsaturated monocarboxylic acids, N-vinylactams, N-vinylamides of saturated monocarboxylic acids, esters of α,β -ethylenically unsaturated mono- and dicarboxylic acids with C₂-C₄-alkanediols, amides of α,β -ethylenically unsaturated mono- and dicarboxylic acids with C₂-C₄-aminoalcohols which have a primary or secondary amino group, vinyl ethers, nonionic, hydrophilic vinyl- and allyl-substituted heterocyclic compounds and mixtures thereof.

42. (Previously Presented) A polymer as claimed in claim 41, which comprises, in copolymerized form, a compound M1) chosen from acrylamide, methacrylamide, N-vinylpyrrolidone, N-vinylcaprolactam, N-vinylformamide, N-vinylacetamide and mixtures thereof.

43. (Previously Presented) A polymer as claimed in claim 40, which additionally comprises, in copolymerized form, at least one free-radically polymerizable compound M2) with an α,β -ethylenically unsaturated double bond and at least one ionogenic and/or ionic group per molecule.

44. (Previously Presented) A polymer as claimed in claim 40, which additionally comprises, in copolymerized form, at least one free-radically polymerizable crosslinking compound with at least two α,β -ethylenically unsaturated double bonds per molecule.

45. (Previously Presented) A polymer as claimed in claim 40, which is obtained by free-radical copolymerization in the presence of a component d) chosen from

- d1) polyether-containing compounds,
- d2) polymers which have at least 50% by weight of repeat units derived from vinyl alcohol,
- d3) starch and starch derivatives,

and mixtures thereof.

46. (Previously Presented) A polymer as claimed in claim 40, obtained by free-radical polymerization of

- 1 to 25% weight, based on the total weight of the components used for the polymerization, of at least one polyallyl-polyether-urethane,
- 50 to 99% by weight of at least one free-radically polymerizable nonionic compound M1),
- 0 to 25% by weight of at least one monomer M2) with at least one ionogenic and/or ionic group per molecule,
- 0 to 10% by weight of at least one crosslinker, optionally in the presence of up to 25% by weight of at least one component d), as defined in claim 45.

47. (Previously Presented) A process for the preparation of a polymer as defined in claim 40 by free-radical polymerization in an aqueous solvent at a pH of from 5.5 to 8.0.

48. (Previously Presented) A process as claimed in claim 47, comprising a first polymerization step and a subsequent second polymerization step, where the reaction mixture between the first and second polymerization step is subjected to stripping with steam or to a steam distillation.

49. (Previously Presented) A cosmetic or pharmaceutical composition comprising
- A) at least one water-soluble or water-dispersible polymer as defined in claim 39,
- and
- B) at least one cosmetically or pharmaceutically acceptable carrier.

50. (Previously Presented) A composition as claimed in claim 49, where the component B) is chosen from

- i) water,
- ii) water-miscible organic solvents,
- iii) oils, fats, waxes,

iv) esters of C₆-C₃₀-monocarboxylic acids with mono-, di- or trihydric alcohols which are different from iii),
v) saturated acyclic and cyclic hydrocarbons,
vi) fatty acids,
vii) fatty alcohols
and mixtures thereof.

51. (Previously Presented) A composition as claimed in claim 49, further comprising at least on constituent different from copolymer A which is chosen from cosmetically active ingredients, emulsifiers, surfactants, preservatives, perfume oils, thickeners, hair polymers, hair and skin conditioners, graft polymers, water-soluble or dispersible silicone-containing polymers, light protection agents, bleaches, gel formers, care agents, colorants, tints, tanning agents, dyes, pigments, bodying agents, humectants, refatting agents, collagen, protein hydrolysates, lipids, antioxidants, antifoams, antistats, emollients, and softeners.

52. (Previously Presented) A composition as claimed in claim 49 in the form of a solution, a gel, wax, foam, spray, an ointment, cream, emulsion, suspension, lotion, milk or paste.

53. (Previously Presented) A cosmetic or pharmaceutical composition comprising a polymer as defined in claim 39 in skin cleansing compositions, compositions for the care and protection of the skin, nail care compositions, preparations for decorative cosmetics and hair treatment compositions.

54. (Previously Presented) The cosmetic or pharmaceutical composition as claimed in claim 53 in hair treatment compositions as thickener, setting agent and/or as conditioner.

55. (Previously Presented) The cosmetic or pharmaceutical composition as claimed in claim 54, where the composition is in the form of a hair gel, hair mousse, shampoo, setting foam, hair tonic, hair spray or hair foam.

56. (Previously Presented) A composition comprising a polymer as defined in claim 39 as auxiliary in pharmacy, or as auxiliary in (a) coating composition(s) for solid medicament forms, or as auxilliary in (a) coating composition(s) for the textile, paper, printing or leather industry, or for agrochemistry.